

Low Power LCD Driving Scheme

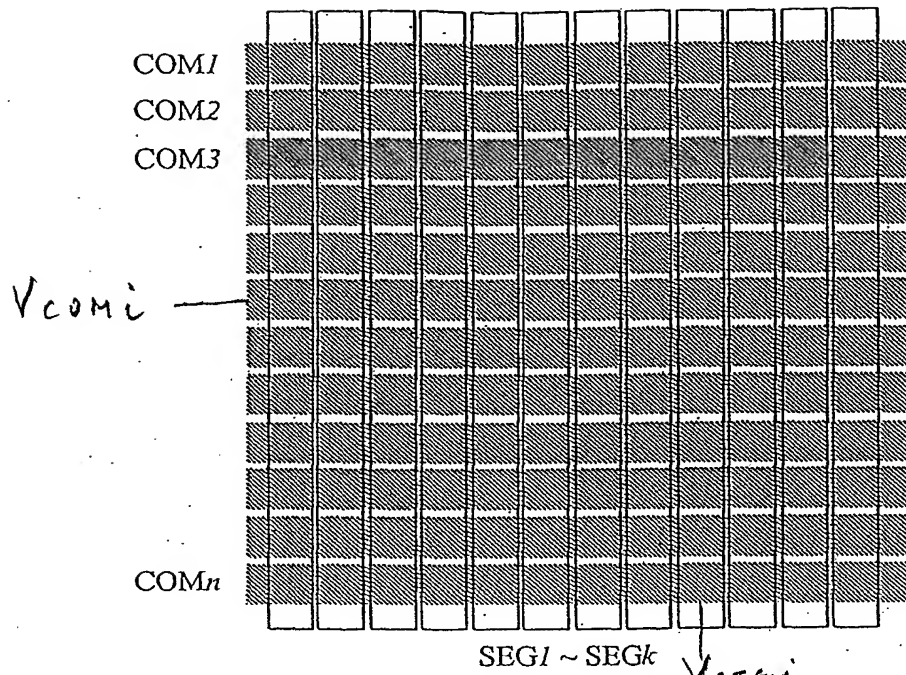


Fig. 1 A see through view of a LCD panel and its ITO electrodes

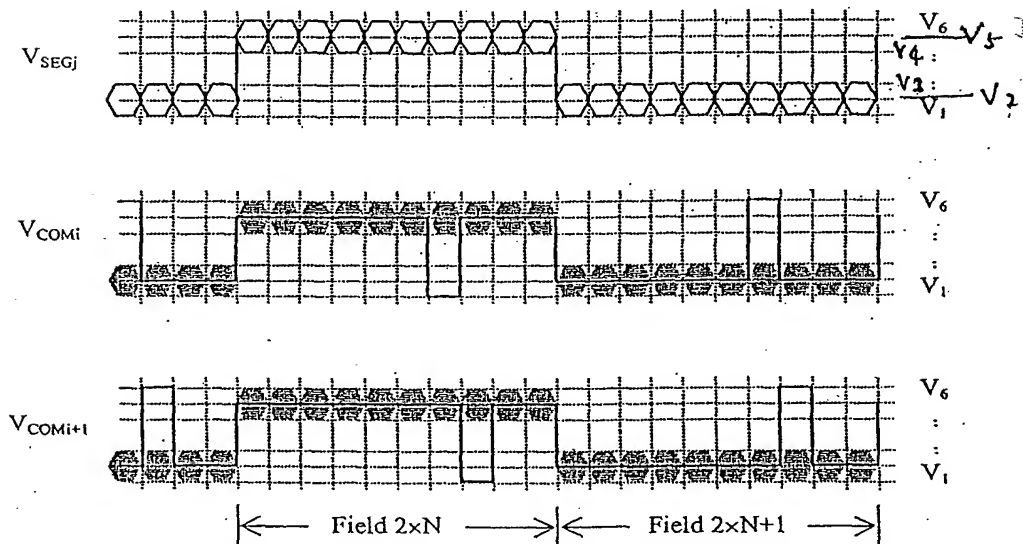
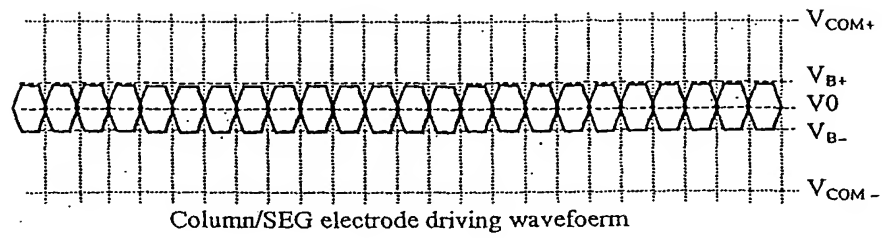
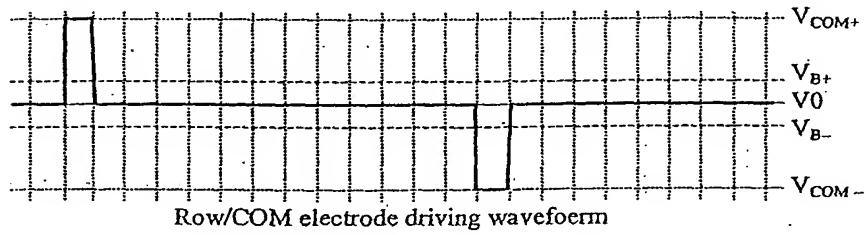


Fig. 2a IAPT driving Wave forms for COM electrodes and SEG electrodes

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Column/SEG electrode driving waveform



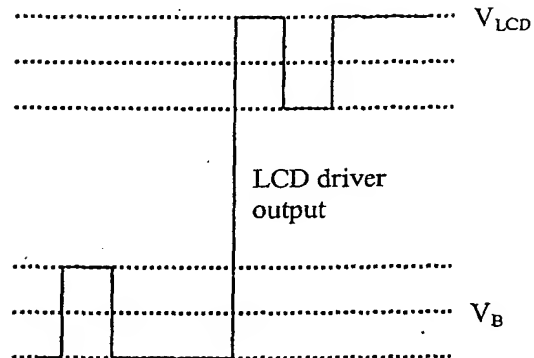
Row/COM electrode driving waveform

Fig. 2b APT driving Wave forms for COM electrodes and SEG electrodes

PRIOR ART

Figures:

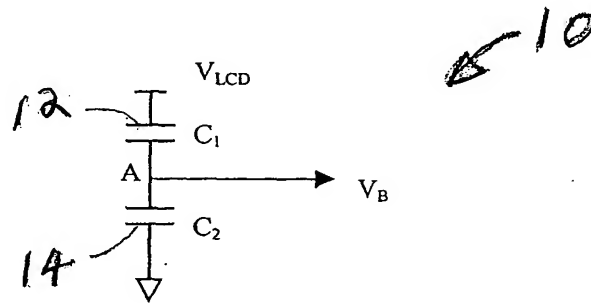
2c
Fig. 2c LCD driving curve



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Fig. 3 A capacitor bias ratio generation circuit



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Fig. 4. A capacitor bias ratio circuit with periodic refreshing.

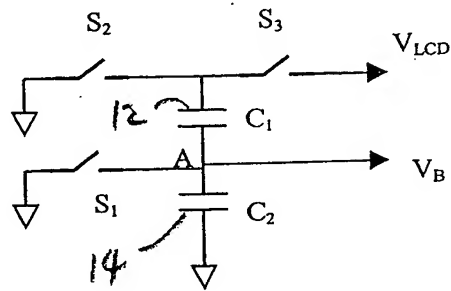
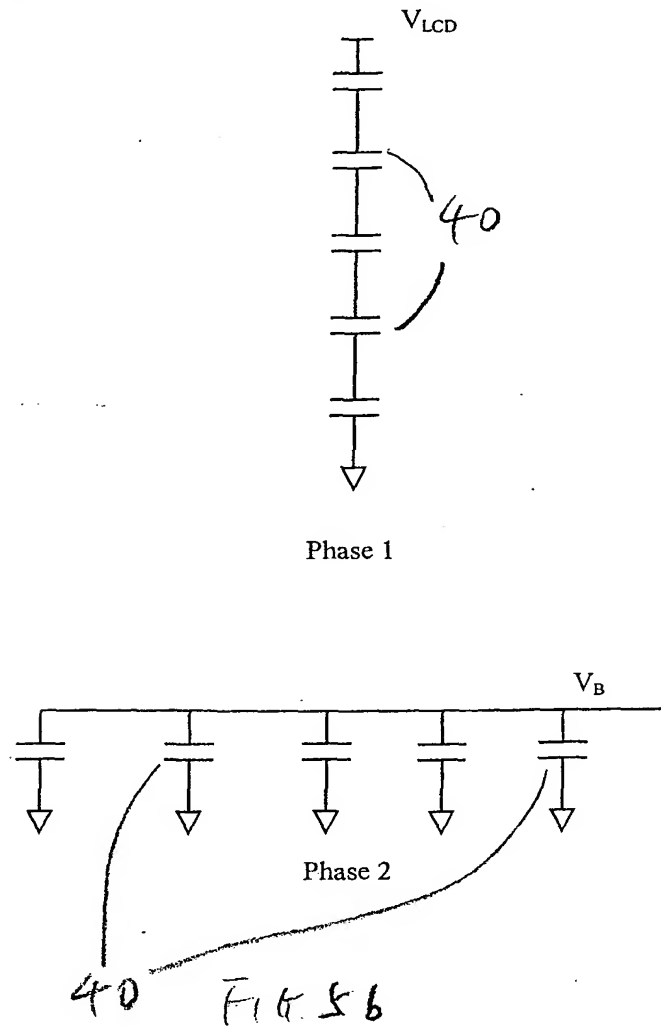


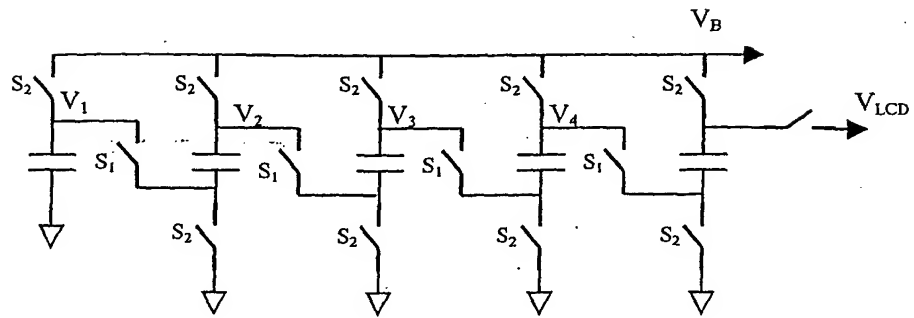
Fig. 5a An alternative capacitor divider bias ratio generation circuits.



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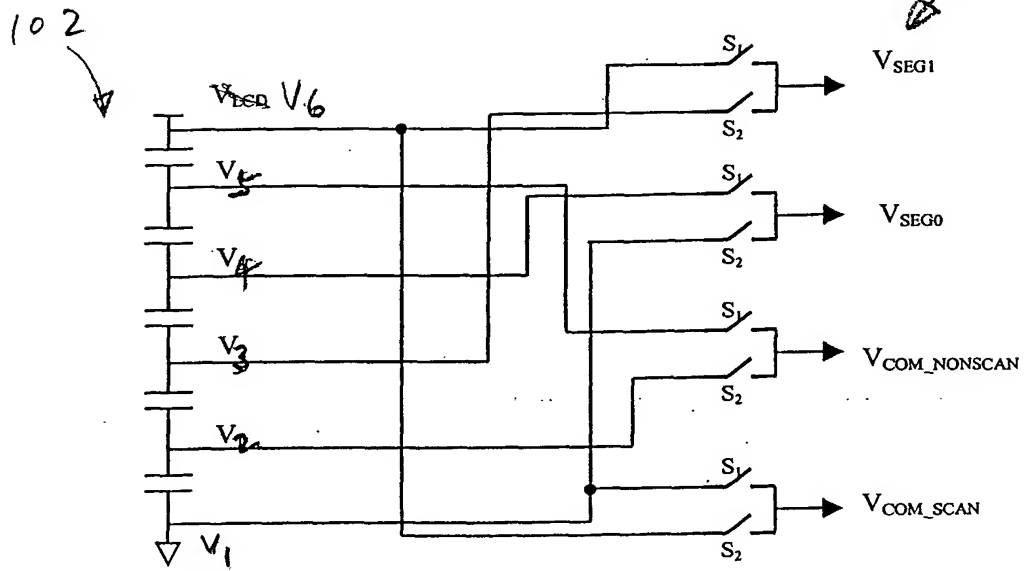
Figure 6. Detailed Implementation for Figure 5.



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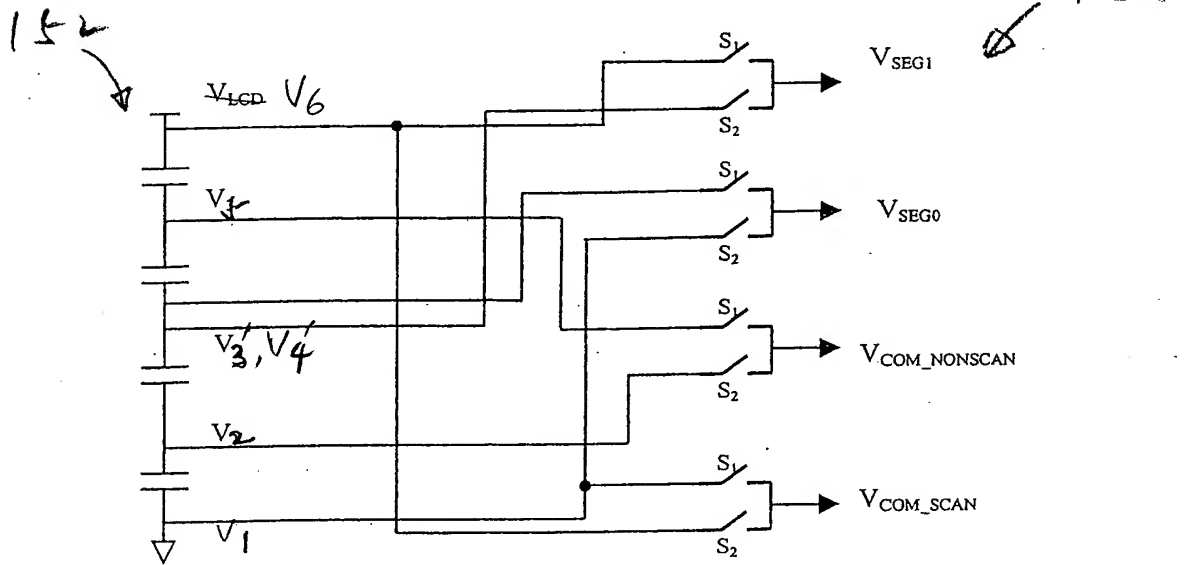
Fig. 7. Direct Drive Capacitor Divider



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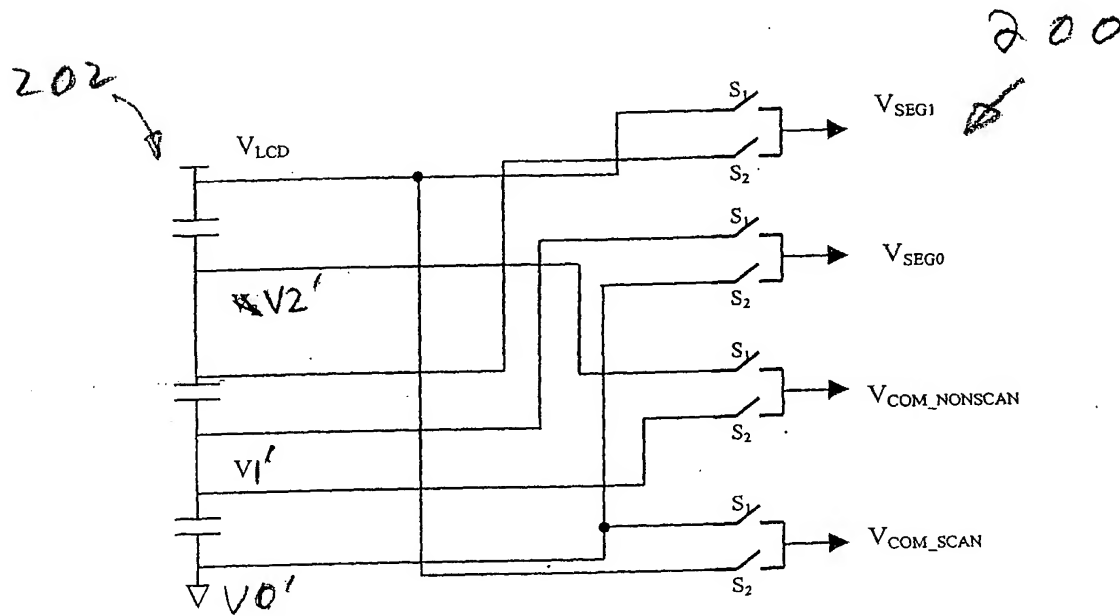
Fig. 8. Direct Drive Capacitor Divider with Four Caps. (BR=4) All the caps are equal.



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Fig. 9. Direct Drive Capacitor Divider with Three Caps. (BR=3) All the caps are equal.



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Fig. 10 1/3 LCD driving waveform

	C1	C2
R1		
R2		
R3		

